THE DER WEEKLY

www.eren.doe.gov/der | Vol. 2 No. 44 | November 2, 2001

Industry News

ABB to Install Energy Storage System in Alaska

ABB, an international power and automation technology group, announced that it has received an order from Golden Valley Association Inc., a nonprofit rural electric cooperative in Fairbanks, Alaska, for a Battery Energy Storage System. The project will cost $30 million, and ABB will supply, install, and manage the system. The unit will consist of a nickel-cadmium battery, power conversion modules, metering, protection and control devices, and service equipment. The storage system will provide continuous voltage during normal operation and backup power. The battery is made up of 13,760 energy cells in four strings, and the first two strings are scheduled for commercial operation during summer 2003.
ABB Press Release, October 29

Hydrogenics Unveils HyUPS™ PEM Fuel Cell

Hydrogenics Corporation, a proton exchange membrane (PEM) fuel cell designer and manufacturer, unveiled its HyUPS™ fuel cell on October 30 during a telecommunications conference in Las Vegas, Nevada. HyUPS™ has a 25 kW capacity and regenerative capabilities, as an integrated electrolyzer recharges the hydrogen supply after grid power is re-established. Hydrogenics also announced that the corporation has entered an agreement with Nextel Communications to demonstrate HyUPS™ at Nextel's cell tower site in California.

Hydrogenics HyUPS™
www.hydrogenics.com

Hydrogenics Press Releases, October 30

LIPA Installs 55 Plug Power Fuel Cells

The Long Island Power Authority (LIPA) announced on October 31 that it has successfully installed 55 Plug Power fuel cells at its West Babylon substation. A total of 75 fuel cells will be operating once the project, part of LIPA's Clean Energy Initiative, is completed. Currently 18 of the fuel cells are generating electricity. LIPA and Plug Power will jointly develop the software that will be used for remote operation, dispatch, and monitoring of the systems. According to a LIPA press release, the Clean Energy Initiative intends to identify and develop the measures and systems needed to facilitate the eventual use of fuel cells operating in parallel with the grid. LIPA Chairman Richard Kessel stated that "the information and experience gained through this program will continue to help fuel cells evolve as a technology that can be utilized by electric utilities as a source of power, and eventually by residential and commercial customers for their own on-site power needs."
LIPA Press Release, October 31

First Plug Power fuel cells placed on site at West Babylon substation

IBEW Completes Solar-Powered Headquarters

On October 31, the International Brotherhood of Electrical Workers (IBEW) Union Local 332 announced that it completed its new headquarters in northern California, with the largest commercial solar power system west of the Mississippi. The photovoltaic (PV) system can generate 55 kW of electricity, which would meet 70 to 80 percent of the building's total electric needs and cut its utility bill in half. The PowerGuard™ tiles, manufactured by PowerLight of Berkeley, California, were installed on the roof and south-side awning of the building. IBEW Local 332 paid $400,000 on installation for the system, 40 percent of which will be rebated by the State of California.
Internet Wire, October 31

IBEW Local 332 headquarters
(www.powerlight.com)

LADWP Orders Siemens' Integrated Meter

Siemens Power Transmission & Distribution, Inc., received an order from the Los Angeles Department of Water & Power (LADWP) for 3,400 of their Spectrum Integrated Meter Systems (SIMS). The systems are expected to reduce up to 240 MW of demand and reduce electricity bills by 15 percent. LADWP will install the wireless real-time meters at local businesses through funding from the California Energy Commission.
Siemens Power Transmission & Distribution Press Release, October 29

(Continued on page 2)

By the Numbers

Effects of September 11 on New York City

80	MW of electric load loss (directly from World Trade Center)
200	MW of total electricity load loss (all buildings, substations, surrounding businesses)
500,000	dollars per day of electric service revenue loss

Source: Personal communication with Anne-Marie Borbely-Bartis, Oct 25

*During a speech at the Alliance to Save Energy's Energy Efficiency Summit on October 25, Secretary Abraham discussed distributed energy resources and hydrogen technologies.**

Power Crunch: The DER Weekly Feature

Federal Legislation Update

Over the past few months members of Congress have introduced legislation relating to distributed energy resources. The following list provides an update to the last DER Weekly legislative update (June 29 issue).

- Senator Harkin (D-IA) introduced the **Hydrogen Future Act of 2001**, S. 1053, on June 14. This bill would reauthorize and amend the Spark M. Mastunaga Hydrogen Research, Development, and Demonstration Act of 1990.
- Senator Jeffords (I-VT) introduced the **Renewable Energy and Energy Efficiency Investment Act** of 2001, S. 1333, on August 2. This bill would encourage and support state programs for renewable energy sources and other programs.
- Senator Cantwell (D-WA) introduced the **Home Energy Generation Act**, S. 1403, on September 5. This bill would amend the Federal Power Act by providing for the use of net metering by certain small electric energy generation systems.
- Congresswoman Woolsey (D-CA) introduced two bills entitled **Renewable Energy and Energy Efficiency Act of 2001**. H.R. 2324 was introduced on June 26, and H.R. 2478 was introduced July 11. Each bill states the goal of requiring 20 percent of domestic energy from stationary sources to be generated from nonhydropower renewable energy sources by the year 2020. H.R. 2324 discusses research and development programs to implement the goal, and H.R. 2478 provides a statutory framework to implement policy for research, development, demonstration and commercial application programs.
- Congressman Inslee (D-WA) introduced the **Clean Energy Incentives Act**, H.R. 2392, on June 28. This bill would provide tax incentives for renewable and alternative electric energy, demand management, distributed energy generation, and other technologies.
- Congressman Rahall (D-WV) introduced the **Tribal Energy Self-Sufficiency Act**, H.R. 2412, on June 28. This bill would make net metering available for renewable energy on Indian reservations and extend tax credits for electricity produced form certain renewable resources including solar, biomass, small hydro, geothermal, and fuel cells on Indian lands.
- Congressman Boehlert (R-NY) introduced the **Comprehensive Energy Research and Technology Act of 2001**, H.R. 2460, on July 11. This bill would authorize appropriations for commercial application of energy technology programs and includes provisions for distributed power hybrid energy systems, micro-cogeneration, hydrogen, bioenergy, transmission infrastructure, and fuel cells.
- Congressman Udall (D-CO) introduced the **Distributed Power Hybrid Energy Act**, H.R. 2496, on July 12. This bill would direct the Secretary of Energy to develop and implement a strategy for RD&D and commercial application of distributed power hybrid energy systems.
- Congressman McCrery (R-LA) introduced the **Energy Tax Policy Act of 2001**, H.R. 2511, on July 17. This bill would provide tax incentives to encourage energy reliability and production and includes provisions on photovoltaics, solar water heating, biomass, fuel cells, wind, and combined heat and power.
- Congressman Pallone (D-NJ) introduced the **Renewable Energy and Energy Efficiency Investment Act of 2001** (H.R. 3037) on October 4. The bill would encourage and support state programs for renewable energy resources and other programs.
- Congressman Terry (R-NE) introduced the **Renewable and Distributed Energy Net Metering Act**, H.R. 3089, on October 11. The bill would amend the Federal Power Act to provide for net metering by certain small electric energy generation systems.

DOE News

IEEE Ballot Results Mandate Further Work

Results of the recent recirculation ballot vote on Draft 8 of the Institute of Electrical and Electronics Engineers (IEEE) P1547 Standard for Interconnecting Distributed Resources with Electric Power Systems were announced at the interconnection standard working group meeting October 16-19 in Las Vegas, Nevada. The recirculation of the draft standard in September achieved a 96 percent return on ballots and an increase in the number of affirmative votes to 103, but provided only a 66 percent affirmative vote. A 75 percent affirmative vote is required in order to proceed to the IEEE Standards Board.

Meeting participants worked toward developing additional recommended changes to achieve a successful consensus ballot action. As a result of the open discussions held during the meeting, and apparent resolution of several key issues, Chairman Richard DeBlasio was encouraged to reword and recirculate another draft. The next P1547 meeting is scheduled for January 31-February 1, 2002 in Washington, DC.

DER Test Facility at NREL Now Operational

On October 25, Joe Galdo, program manager for the Distributed Power Program; National Renewable Energy Laboratory (NREL) staff members; and industry partners toured the Distributed Energy Resources (DER) System

(Continued on page 3)

*Secretary Abraham said, "to achieve our vision of greater individual choice, our Plan embraces exploring the idea of distributed energy."**

Integration Test facility, which is located next to the Hybrid Power Test Bed at NREL's National Wind Technology Center. With the addition of a 250-kW grid simulator, a surge tester, and a 28-kW Capstone microturbine to the existing Wind Program Hybrid Power Test Bed, the DER System Integration Test Facility became operational in mid-October. The Distributed Power Program will operate the test and development facility to support standards development (i.e. IEEE P1547 and P1589) and to investigate other emerging DER system integration issues. NREL engineers at this facility characterize, test, and evaluate the performance of interconnection systems to make sure they operate properly and meet interconnection, communication, and other applicable standards. Engineers also test advanced designs for grid-connected or stand-alone use, microgrids, and hybrid systems and coordinate laboratory and industry testing activities, in particular, by defining and providing standard testing and evaluation procedures. For more information on the test facility visit www.eren.doe.gov/distributedpower.

GE Reports Key Modeling Results

General Electric Corporate Research (GE), a National Renewable Energy Laboratory (NREL) subcontractor, reported key results of their modeling efforts that support development of advanced DER interconnection technology at the Distributed Power Program and Industrial Distributed Generation (DG) Program Quarterly Review on October 23-25 in Golden, Colorado. GE's findings included: modest penetration (15 percent or less of feeder peak load) of DG has relatively little effect on system voltage; high penetrations (50 percent and greater) add challenges for voltage regulation, and may require additional controls, intelligence, or communication; and widespread penetration of DG at the load appears to be beneficial with respect to system dynamic response to bulk system disturbances. Additionally, GE's analysis indicated that, with high penetration of DG, overly aggressive anti-islanding trip characteristics could cause severe power deficits in the bulk power system and even system failure. Staff from NREL, Oak Ridge National Laboratory (ORNL) and Sandia National Laboratory and NREL and ORNL subcontractors attended the review.

USACA Meeting

Debbie Haught and Merrill Smith, Office of Distributed Energy Resources (DER), attended the United States Advanced Ceramics Association (USACA) meeting on November 1 in College Park, Maryland. This meeting highlighted established technologies using engine driven generator sets and gas turbines as well as the newly emerging microturbines and fuel cells. Debbie Haught gave a presentation on the activities within the Office of DER.

Calendar of Events

As always, please check with event sponsors to confirm date and location of all events. If your organization's event is postponed or cancelled, contact Brian Marchionini at bmarchionini@energeticsinc.com.

NOVEMBER 2001			
5-6	Clean Air Technologies 2001	Anaheim, CA	www.aqmdconferences.org
6	NAESCO DG Conference	Miami, FL	www.naesco.org/conference.htm
6-7	Empire Energy & Environment Expo	Albany, NY	info@eba-nys.org
6-7	14th NREL Industry Growth Forum	San Jose, CA	Sara Huntly, 303-275-4317
7	Ohio Fuel Cell Technology Symposium	Cleveland, OH	www.cesnet.org
7-8	Demand Response Programs: Results, Status and Future	Washington, DC	Peak Load Management Alliance Fall Conference www.aesp.org/forms/form.cfm?id=14
7-9	NAESCO 18th Annual Conference	Miami, FL	www.naesco.org/conference.htm
11-14	113th NARUC Annual Convention	Philadelphia, PA	www.naruc.org
12-14	Fuel Cells for Stationary, Automotive and Portable Apps.	Fort Lauderdale, FL	Florida Educational Seminars, (561) 367-0193
13-14	Oil Heat Roadmap Meeting	College Park, MD	jbrinch@energetics.com
14-15	Energy Storage Program Review	Arlington, VA	jblais@sentech.org; Dr. Imre Gyuk (202) 586-1482
27	Illinois Wind Workshop	Lisle, IL	www.eren.doe.gov/cro
27-28	Business for Fuel Cells for Stationary Applications	Brussels, Belgium	www.eyeforfuelcells.com
28-29	Business Energy Solutions Expo	Orlando, FL	www.aeecenter.org; www.tecoenergy.com
28-30	DER Conference and Peer Review	Washington, DC	cs@energeticsinc.com

*The Secretary also said, "to achieve our vision of cleaner, smaller and more efficient sources of energy, we will also expand our exploration of the role of fuel cells and hybrid engines."**

Calendar of Events

DECEMBER 2001			
3-4	4th Business Case for Opportunity and Investment in Fuel Cells	Miami, FL	www.cbinet.com
3-5	Next Generation Turbine and Condition Monitoring Conference and Workshop	Galvestone, TX	www.netl.doe.gov
5-7	4th Annual Interactive Energy Conf.	Houston, TX	www.interactiveenergy.com/2001
11-13	Power-Gen International	Las Vegas, NV	www.pennwellevents.com
11-12	Workshop on Interconnecting Distributed Generation	Honolulu, HI	mtome@dbedt.hawaii.gov or call: 808-587-3809; www.state.hi.us/dbedt/ert
JANUARY 2002			
14-15	Material Technologies for Fuel Cells and Power Electronics	Cocoa Beach, FL	www.ceramics.org/meetings/ECD2002/expo.asp
17-18	Annual Workshop on Microturbine Applications	College Park, MD	Sandra Maldonado maldonadosl@ornl.gov
28-Feb.1	Distributed Power Program Annual Review Meeting	Arlington, VA	kimberly_taylor@nrel.gov
29-Feb.1	Reducing Your Energy Costs Conference and Exhibit	New Orleans, LA	Stuart Steller, 781-939-2411, s.steller@cbinet.com
FEBRUARY 2002			
27-Mar 1	DistribuTECH	Miami Beach, FL	www.pennwellevents.com
2	Distributed Resources, Renewables and the Environment	Portland, OR	newsdata@newsdata.com; 503-230-5884 (Bonneville Power Administration)
6-7	Fuel Cell Dynamics: Reality, Not Hype	New York, NY	www.alliedworld.com
11-13	NASEO 2002 Energy Outlook Conference	Washington, DC	www.naseo.org/events/default.htm
20-22	New and Emerging Technologies Conference	Tucson, AZ	www.nreca.org/edu_events/conferences/newtech/html/conference.html
MARCH 2002			
11-13	6th Annual Distributed Generation & On-Site Power Conference	Atlanta, GA	www.dist-gen.com; 508-427-9470; gesi@mediaone.net
17-21	EPRI's 7th Distributed Resources Conference and Expo	Dallas, TX	lgoldie@epri.com
19-21	Electric Power 2002	St. Louis, MO	www.electricpowerexpo.com
20-23	Building Energy Conference	Medford, MA	www.nesea.org; 877-44SOLAR, ext. 20

** Source: Alliance to Save Energy Web site: www.ase.org/stars/spencerspeech.htm*